Inputs, Assumptions and Issues
2007 Natural Gas Assessment Report
March 26, 2007 Staff Workshop

Approach to 2007 Assessment Report

New Approach: de-emphasizes a single point forecast of prices from the North America Regional Model (NARG) – presents a forecast to use as a take-off point for discussion in an effort to lead stakeholders to a broader reflection of the range of potential outcomes and their implications for California's energy policy.

Inputs and Assumptions for NARG Reference Case

(See attached spreadsheet)

Current Issues and Content

- Demand/Supply
    - Elasticity
    - Efficiency gains in Industrial Sector
    - Growth
    - Reference case assumptions
    - Supply mix
    - Demand regions
    - Demand categories
    - Initial demand Assumptions
    - Data sources
    - Capital costs and cost of capital assumptions
    - Declining supply, despite increasing of drilling investment
    - Flattening of demand (growing efficiency of industrial sector, and migration of industries). Industrial consumptions dropped 2 TCF since 1999. The gap between US consumption and production has been growing since 1988 ranging 2-3 TCF since 1995, and softened a little in 2006.
    - Consumption in power generation sector in the western region accounts for a large amount of total gas consumption.
    - The potential advancement of renewable, coal, and nuclear generation technologies impose and added randomness to the future of natural gas demand. Potential improvement in long-distance electricity transmission.
    - Because of expanded drilling, Rockies natural gas production now equals about 8 BCFD or 15 percent of total US dry gas production.
    - EIA supply forecasts
    - Increase in drilling and decline in Production per well
    - New technologies to increase supply of natural gas
    - Production trends from supply basins

- Infrastructure
    - Reference Case assumptions
    - Price regulation
    - Appropriate cost of capital
    - The western market is much more robust than it was 5-years ago because of massive, across the board investment in all phases of the supply chain (upstream wells, gathering and processing facilities, interstate pipeline expansions, market area storage, and distribution system).
    - Storage capacity limitations in the Southwest can influence pipeline operating conditions, especially during peak hours.
    - Infrastructure adequacy
    - Impact of additional capacity
    - Impact of LNG on the West
    - Underutilization of interstate pipelines (El Paso)

- Prices
    - Reference Case
    - Sensitivities
    - Benchmark (other forecasts, Future market)
    - Influence of Commodities Trading
    - Relationship between Oil and Gas Prices
    - By end of 2006, US natural gas prices only slightly above the levels of last few years prices, despite major supply disruptions and strong summer demand.
    - There are shift in pricing regime towards the future market. The future market now offers contract periods up to seven years and is liquid for at least a two to three-year period. There are now more than 40 delivery points available for basis swaps

- Other

    - LNG Activities (number of facilities proposed, licensed, and under development)
    - GHG (Carbon-restricted energy world)
    - Future Market (shift in pricing regime towards the future market)
    - Financial trading (growing importance of financial investors and traders)
    - Long-term contracts
    - Drilling offshore/Alaska
    - Global market (emergence of new large customers; and re-emergence of oil/gas nationalism)
    - Supply Securities
        > Short-term (Operation reliability, supply disruption)
        > Long-term (Adequacy of supply, adequacy of investment)
    - Adoption of an interchangeability index (Wobbe index) and its impact on LNG activities